

BMDS PROGRAMS

Aegis Ballistic Missile Defense (Aegis BMD)

SUMMARY

- The Aegis BMD system has demonstrated that it can intercept a unitary, short-range target in the ascent and descent midcourse phases of flight.
- The kinetic kill vehicle has demonstrated that it can divert to an impact point on the payload section of the target.
- Improper functioning of the kinetic kill vehicle Divert and Attitude Control System, when using the pulsed thrust modes, occurred during Flight Mission 5 in June 2003. Flight-testing planned in 2005 should validate design changes intended to resolve this issue.
- The program demonstrated Long-Range Search and Track capability in GMD flight-tests and in Glory Trip 185.
- The BMDS has not used Aegis track data in real time to support an intercept of a long-range ballistic missile.
- All Aegis BMD flight-testing employs operational Navy ships with operational crews.

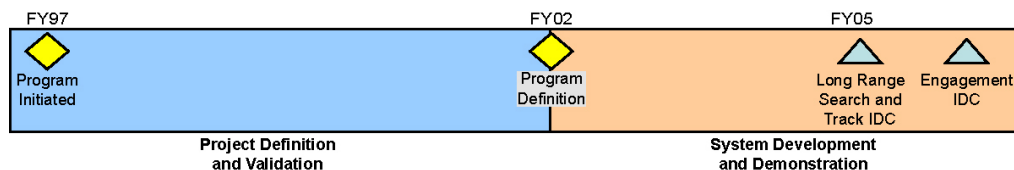
SYSTEM DESCRIPTION AND MISSION

The Aegis BMD element design provides the ability to defeat short-range (less than 600 kilometers), medium-range (600 to 1,300 kilometers), and intermediate-range (1,300-5,500 kilometers) ballistic missiles outside the atmosphere. The Aegis BMD element consists of the shipboard Aegis Weapon System and the Standard Missile-3 (SM-3) missile. Aegis BMD includes a Long Range Surveillance and Track capability (Aegis BMD 3.0E software) to support BMDS engagements of intercontinental ballistic missile threats. The Aegis Weapon System detects and tracks the threat, and provides guidance information to the SM-3 missile. Given a command, the Aegis ship launches the three-stage SM-3 hit-to-kill missile and kinetic warhead.



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TEST AND EVALUATION ACTIVITY



Aegis BMD conducted Flight Mission-6 (FM-6) at the Pacific Missile Range Facility on December 11, 2003. FM-6 was the first Aegis BMD mission to guide a kill vehicle to intercept the target at the lethal aim point on the warhead section. Aegis also provided real time kill assessment. A “no notice” target launch and the use of intelligence messages developed by the Navy’s Operational Test Agency enhanced the test’s operational realism.

MDA conducted multiple tests during FY04 to demonstrate the Aegis BMD element’s ability to transmit data to other BMDS elements. These included Pacific Explorer II in March, targets of opportunity including Glory Trip 185 in June, Pacific Explorer III in July, and Pacific Explorer IV (in conjunction with SICO-6A) in September. This is also a test objective for GMD IFT-13C.

BMDS PROGRAMS

In October 2004, Integrated Ground Test 4 tested the BMDS Limited Defensive Operations capability to detect and track a threat ballistic missile and transition the track between BMDS elements using Aegis BMD 3.0E software. This testing included off-nominal and variation cases.

In FY05, MDA plans three intercept tests against unitary and separating targets using Aegis BMD 3.0 and the SM-3 Block I missile. Aegis BMD plans to participate in GMD flight-tests to demonstrate Long Range Surveillance and Track performance. MDA plans to make SM-3 Block I missiles available to the combatant commander for emergency use, if required, beginning early in 2005.

TEST AND EVALUATION ASSESSMENT

The Navy deployed the Long Range Surveillance and Track capability on Aegis destroyers in 2004 and exercised the software during Pacific Explorer IV/SICO-6a events. Aegis BMD 3.0E software includes the capability to launch Tomahawk missiles, as well as ship self-defense. The current schedule plans for SM-3 Block I missiles to be available in December 2004 and tested in FY05. Plans are for Aegis BMD ships to demonstrate a limited anti-air warfare self-defense capability and a missile defense capability with SM-3 Block IA missiles in January 2006. Confirming search and track performance to support BMDS engagements of intermediate and long-range ballistic missiles is a high priority objective for future tests.

Performance problems with the kinetic warhead Divert and Attitude Control System, noted during Flight Mission 5, remain a concern. Plans are to flight-test the updated design for the Divert and Attitude Control System in FY05. Separating target tests scheduled for the second and third quarter of 2005 will confirm divert capability.

GMD has not yet used actual long-range missile track data from Aegis BMD to develop a Weapons Task Plan in real time. GMD has demonstrated this capability during ground tests using previously recorded data transmitted from Aegis BMD. MDA plans to use the Long Range Surveillance and Track data to develop a Weapons Task Plan in real time during IFT-14 - Engage on Aegis - in 3QFY05, and Flight Test Ground-Based Interceptor 04-1 - Engage on Beale - in 4QFY05.